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Research Article

AN AETIOPATHOLOGICAL STUDY OF *MEDOVAHA SROTODUSHTI* WITH SPECIAL REFERENCE TO HYPERLIPIDEMIA AND ITS *UPASHAYATMAKA* STUDY OF *MUSTA KWATH*

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ABSTRACT

Today is the era of modernization and everybody is busy and living stressful life. A variety of health problems might arise from people developing behaviors that discourage them from being active and encourage a sedentary lifestyle. Some of the factors that contribute to chronic non-communicable diseases, which can have near-fatal outcomes, include stress, eating fast food, and not exercising. The burden of metabolic disorders is increasing due to the significant changes that have occurred in daily living during the past century. Hyperlipidemia is one of them, which is potential risk factor for multiple disease like atherosclerosis, metabolic syndrome and even hypertension. The term "hyperlipidemia" refers to elevated serum levels of either triglycerides or cholesterol, or both. In Ayurvedic literature, hyperlipidemia is discussed as *Medovriddhi, Rasagata Sneha Vriddhi,* and *Rasa Raktagata Sneha Vriddhi,* among other names. When kept in the body for a prolonged period of time, hyperlipidemia is the same as increased *Asthayi Sama Medo Dhatu* and causes difficulties. While describing the treatment of *Medovaha Srotas vikar*, I select the drug *Musta*. It is mentioned in *Lekhaneeya Dashemani dravyas*. The medicine was chosen due to its wide availability, affordability, and variety of applications.

INTRODUCTION

An increase in one or more plasma lipids, such as phospholipids, cholesterol, cholesterol esters, and triglycerides, is known as hyperlipidemia. One of the main risk factors for cardiovascular diseases (CVDs) is hyperlipidemia.

The number of people with hyperlipidemia has increased due to the metabolic effects of dietary and lifestyle modifications.[1]

The etiological factors for hyperlipidemia can also be attributed to the causes of *Medovaha Srotodushti*, since *Dhatu Dushti* arises from any disturbance in the *Srotas*. The vitiation of *Medovaha Srotas* can be attributed to various factors such as excessive alcohol use, fatty food consumption, sleep deprivation, and lack of exercise. [2]

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In Pathological condition

Consumption of a diet high in fat (*Snigdha Ahara*) results in increased synthesis and storage of nutrients similar to *Medo Dhatu*. The *Rasa, Rakta*, and *Mamsa Dhatus* are the first to be nourished by the ingested *Sneha Dravyas*, while the *Medo Dhatu* is only supplied afterward. This causes an excessive amount of *Asthayi Medo Dhatu* to form, which is associated with hyperlipidemia, a condition in which the blood contains an excessive amount of lipoproteins accumulated in it.

AIM

An aetiopathological study of *Medovaha Srotodushti* with special reference to hyperlipidemia and its *Upashayatmaka* study of *Musta Kwath*."

OBJECTIVES

1. To evaluate the etiology and pathology of disease, *Medavaha Srotodushti* vis-a-vis hyperlipidemia.
2. To assess the *Upashayatmaka* effect of *Musta Kwath* in clinically diagnosed case of *Medovaha Srotodushti.*

3. Try to establish a guideline regarding dietary habit and lifestyle of such type of disease.

MATERIALS AND METHODS

Materials

- *Medovaha Srotodushti*, *Medoroga*, *Meda* and *Srotas* were reviewed in all *Samhita*.
- Hyperlipidemia was reviewed in modern texts, journals and internet.
- *Musta* and *Musta Kwath* were reviewed in all *Samhita*, text books, journals and internet.
- *Musta* was provided by Pharmacy of Government Ayurvedic College and Hospital, Kadamkuan, Patna, Bihar.

Methods

A total no. of 30 patients fulfilling the criteria and attending the OPD and IPD of GACH, Patna, were selected for the present study irrespective of age, sex, religion etc. A comprehensive case-taking form was specifically created in accordance with the study's protocol, including all aspects of the illness in both modern and Ayurvedic terminology.

The study has been approved by the institutional ethics committee (Sl. No. 40, Letter no-349, Dated- 30/04/22) and is registered to CTRI (CTRI/2023/03/050276) and consent from each patient was obtained before starting the research work on approved proforma.

Method of Preparation of *Musta Kwath*

Initially drug *Cyperus rotundus Linn*. Was identified and authentified in pharmacy Government Ayurvedic College and Hospital, Patna. *Motha* rhizomes was procured from the storage of our pharmacy. Firstly, foreign matter was separated with water and kept to sun- dried. They were grinded and coarse *Churna* was made. Total *Musta* coarse powered weight was 38kg. After that packing of *Musta* coarse *Churna* was made. Packet weight was 300gm and in every follow-up one packet was provided for per patient.

C) Weighing of drug D) Sealing of drug

Inclusion Criteria

1. The patient having age between 20 to 60 years.
2. The patient's sign and symptom should be based on both Ayurvedic as well as modern view.

Exclusion Criteria

1. Age above 60 and less than 20 years.
2. Immunocompromised patients e.g. HIV etc.
3. Severe deformities.
4. Pregnant and lactating women not included in this study.
5. Patients suffering from type 1 diabetes mellitus and uncontrolled diabetes or hypertension.

Diagnostic Criteria

Patients were diagnosed on the basis of lipid Profile. Any one or more of the following criteria were selected.

- ♦ S. Cholesterol (201mg/dl or more)
- ♦ S. Triglycerides (151mg/dl or more)
- ♦ S. LDL (131mg/dl or more)
- ♦ S. VLDL (41mg/dl or more)

Study Type

- ➢ Open randomized clinical study.
- ➢ Prior to their inclusion in the trial, all patients provided their informed permission.
- ➢ Separate case paper proforma will be prepared as per need.

Drugs and Posology

Table 1: *Musta (Cyperus rotundus* Linn.*)* [3]

Botanical Name	*Cyperus rotundus* Linn. (*Bhadramusta*)
Family Name	Cyperaceae
Hindi	*Motha*
Synonyms	*Musta, Varidhara, Musta, Meghakhya, Kuruvindaka, Varaha, Abda* and *Vajakaseruka*

General Properties & Uses: The tubers have anti-inflammatory, digestive, carminative, anthelminthic, stomachic, diuretic, febrifuge, hypolipidemic, anti-obesity, antioxidant, and hepatoprotective properties. They are also bitter, acrid, astringent, cooling, and anti-inflammatory. It is used to treat intestinal worms, cough, bronchitis, renal and vesical calculi, dyspepsia, and hyperdipsia.

Table 2

Drug	***Musta Kwath***
Dose	40 ml BD
Duration	60 days
Kala	Before meals

Pathya Apathya

Every patient who was registered was given instructions on specific food modifications and exercise regimens. Patients were instructed to restrict their intake of saturated fats, such as oil and ghee, when making dietary adjustments. Additionally, they were designed to reduce the consumption of items high in energy, such as rice, potatoes, fried foods, and baked items. Every patient received advice to limit their intake and keep one-third of their stomachs empty. They were also told not to consume chilled water and to stick to lukewarm water. Depending on their ability, all enrolled patients were asked to walk briskly for 30 to 45 minutes as part of their fitness regimen.

Assessment of Therapy

Criteria for Assessment

Every fifteen days, the patients were checked up, and in order to evaluate any changes in the patients, an appropriate scoring system and objective indicators were noted. The following objective and subjective criteria were used to evaluate the therapy's effectiveness after two months of treatment.

Subjective Criteria

While the majority of patients came with concerns related to *Medoroga*, no ancient or modern source specifically mentions the signs and symptoms of hyperlipidemia. As a result, a multidimensional scoring pattern was employed for the symptomatic evaluation of the *Medoroga* signs and symptoms, which are subjective in nature. The patients were evaluated twice, with scores assigned based on the intensity of their symptoms both before and after the therapy. The percentage of relief was obtained by statistical analysis in order to evaluate the effectiveness of the therapy.

Absence of symptoms - 0
Mild degree of symptoms - 1
Moderated degree of symptoms - 2
Severe degree of symptoms - 3

The details of the scoring pattern adopted for the main signs and symptoms in the present study were as follows.

Table 3: Subjective Assessment

1.	***Kshudra shwasa* (dyspnoea on exertion)**	○ Dyspnoea after heavy work but relieved after rest - 0 ○ Dyspnoea after moderate work but relieved late and up to tolerance -1 ○ Dyspnoea after little work but relieved soon and up to tolerance -2 ○ Dyspnoea in resting condition- 3
2.	***Atipipasa***	○ Normal thirst (Up to 2.5 lit to 3.0 lit intake of water in 24 hours) - 0 ○ 3.0 to 4.0 lit intake of water in 24 hours -1 ○ 4.0 lit to 5.0 lit water in 24 hours - 2 ○ More than 5 lit. intake of water in 24 hours- 3
3.	***Atinidra***	○ Normal sleeps 6–8 hrs/Day -0 ○ Sleep up to 8 hrs/day with *Angagaurav* - 1 ○ Sleep up to 8 hrs/day with *Angagaurav* and *Jrimbha* - 2 ○ Sleep up to 10 hrs/day with *Tandra* and *Klama* - 3

4.	***Kshudha***	○ Feeling of hunger after 6 hours -0 ○ Feeling of hunger between 5 to 6 hours -1 ○ Feeling of hunger 4 hours after meal -2 ○ Irritable desire of hunger within 3 hours after meal -3
5.	***Swedadhikya* (at normal temperature in normal condition)**	○ Sweating after heavy work and fast movement or in hot season -0 ○ Profuse sweating after moderate work and movement -1 ○ Profuse sweating after little work and movement -2 ○ Sweating even at rest or in cold season -3
6.	***Dourgandya***	○ Absence of bad smell -0 ○ Occasional bad smell in the body -1 ○ Persistent bad smell limited to close areas suppress by deodorants -2 ○ Persistent bad smell felt from long distance even intolerable to the patient himself -3
7.	***Chala Sphika Udara Stana***	○ Absence of *Chalatva* -0 ○ Little visible movement after fast movement -1 ○ Little visible movement after moderate movement -2 ○ Movement even after changing posture -3
8.	***Dourbalya***	○ Can do routine exercise -0 ○ Can do moderate exercise without difficulty -1 ○ Can do mild exercise with very difficult -2 ○ Cannot be even mild exercise -3
9.	***Snigdhangata***	○ Normal *Snigdhata* -0 ○ Oily complexion of body in summer season -1 ○ Oily complexion of body in dry season -2 ○ Always feel oiliness need special care-3
10	***Sandhi Shoola***	○ No pain -0 ○ Mild pain due to excessive walking -1 ○ Moderate pain due to excessive walking later up to tolerance -2 ○ Severe pain at the time of resting or sitting also -3
11.	***Alasya/ Utsahahani***	○ No *Alasya* (doing work satisfactorily with proper vigor in time) -0 ○ Doing work satisfactorily with late initiation -1 ○ Doing work unsatisfactory with initiation late in time with lot of mental stress -2 ○ Does not have initiation and do not want to work even after motivation -3
12	***Gatra Sada***	○ No fatigue -0 ○ Little fatigue in doing hard work -1 ○ Moderate fatigue in doing routine work -2 ○ Excessive fatigue even in doing little work -3
13.	***Anga Gaurava***	○ No heaviness in body -0 ○ Feels heaviness in body which occasionally hamper daily routine work -1 ○ Feeling of heaviness in body which frequently hamper normal activities -2 ○ Feeling of heaviness throughout the day totally hampering normal activities- 3

The evaluation was conducted both prior to the initiation of the therapy and sixty days later, upon its conclusion. The improvement was evaluated using statistical analyses and the percentage of relief that was attained.

Objective Criteria

Biochemical Test

Complete lipid profile as S. Cholesterol, S. Triglycerides, S. HDL, S. LDL, and S. VLDL were

investigated biochemically both before and after treatment.

Anthropometric measurements

Body mass index (BMI) can be used to classify those who are under- or over- nutrition. It is calculated by squared the weight in kilograms divided by the height in meters.[4]

Body Mass Index as a Prognostic Indicator

The disorders linked to an adult's high body mass index (BMI) are divided into three categories by the World Health Organization:

1. **Slightly increased risk:** Cancer of the breast, endometrium, and colon; changes in fertility and reproduction; polycystic ovary syndrome; low back pain; increased risk of anesthesia; and birth abnormalities.
2. **Moderately increased risk**: Chronic heart disease, hypertension, osteoarthritis and gout.
3. **Greatly increased risk:** Dyspnoea, insulin resistance, dyslipidemia, gallbladder disease, and sleep apnea. Obesity has been a significant risk factor for fatty liver in recent years. [5]

Table 4: Obesity and BMI [6]

Obesity and BMI (kg/m^2)		
	WHO Criteria	**Indian Criteria**
Normal	18-25	18-23
Overweight	<30(26-29)	≤ 25
Obesity	> 30(30-39)	<25
Morbid obesity	>40	≥32.5

Waist-hip ratio: When the body is upright, the measurement of the abdominal circumference is made at the level of the greater trochanter and at the point that is equally spaced between the iliac crest and the Costal margins. The statement suggests that abdominal obesity is a component of metabolic syndrome. abdominal obesity is indicated by waist circumference.

> 102 cm (>90cm in Indian) in men and

> 88 cm (≥80cm in Indian) in women. [7]

Effect of therapy on various biochemical parameters

Based on the overall impact of therapy: The percentage of score reduction was used to evaluate the overall impact of therapy.

Table 5

Assessment	Score
Marked improvement	>75%
Moderately improvement	50-75%
Mild improvement	25-50%
No change	<25%

Statistical Analysis

A statistical analysis was conducted using B.T. (before treatment) to examine all of the observations gathered on different parameters. The following tests were run: Wilcoxon's signed rank test, Paired 't' test, Mean (x), Standard deviation (S.D.), Standard error (S.E.), and P>0.05, P<0.05, P<0.01, and P<0.001. The Wilcoxon signed Rank test was used to evaluate the subjective parameter, while the Paired 't' test was used to evaluate the objective parameters.

The obtained results were interpreted as Wilcoxon's Signed Rank test Paired 't' test

Insignificant P>0.05

Significant P<0.05, P<0.01

Highly significant P<0.001

OBSERVATION

In this study maximum 46.6% patients belonged to age group of 41-50 years. Out of 30 patients 56.6% patients were male and 43.33% patients were female. In which 96.66% patients were from Hindu community, while only 3.33% patients were from Muslim community. The socioeconomic status showed that maximum patients belonged to middle class (43.33%) followed by patients who belonged to poor class (16.66%). According to occupation maximum patients were housewives (33.33%) followed by of patients doing business (26.66%).

Deha Prakriti wise observation showed that maximum patients had *Kaphapradhana Pittanubandhi Prakriti* (53.33%), followed by patients having *Kaphapradhana Vatanubandhi Prakriti* (43.33%) and *Pittapradhana Vatanubandhi Prakriti* (3.33%) respectively. Maximum number of patients 76.67% were taking both vegetarian and non-vegetarian food. According to this study, up to 53.33% of patients engaged in irregular exercise. 26.67% patients were not performing any type of exercise. 80% of the patients slept soundly, and the majority slept for seven to nine hours per day

The *Aharaatmaka Nidana* reported as *Atibhojana* in 70% patients, *Snigdhahara* in 63.33%

patients, *Dadhi sevana* in 53.33% patients, *Atimadhura Ahara* in 43.33%, *Guruahara* in 30%, *Mamsarasaevana* in 23.33% patients, *Sheetahara* in 13% patients and *Sarpi* in 10% patients. *Viharaatmaka Nidana* recorded in present series were *Diwaswapana* in 80% patients, *Sukhsaiyasevana* in 30% patients, tobacco/smoking in 33.3% patients, *Avyayama* in 26.66% patients and *Avyavaya* in 13.33% patients.

RESULT

In this present clinical study, the trial drug *Musta Kwath* was given in 30 patients in which all 30 patients completed the trial for a period of 60 days and results are as follows:

Table 6: Effect of Drug on Following Symptoms

Kshudra Shwasa	**Mean**	**Median**	**SD**	**SE**	**Wilcoxon Z**	**P-Value**	**% Effect**	**Result**
BT	1.30	2.00	0.92	0.17	-4.600[b]	0.0000042	58.97	Sig
AT	0.53	0.50	0.57	0.10				

Ati pipasa	**Mean**	**Median**	**SD**	**SE**	**Wilcoxon Z**	**P-Value**	**% Effect**	**Result**
BT	1.70	2.00	0.88	0.16	-4.973[b]	0.0000007	58.82	Sig
AT	0.70	1.00	0.70	0.13				

Atinindra	**Mean**	**Median**	**SD**	**SE**	**Wilcoxon Z**	**P-Value**	**% Effect**	**Result**
BT	0.77	1.00	0.86	0.16	-3.638[b]	0.0002747	65.22	Sig
AT	0.27	0.00	0.52	0.10				

Kshudha	**Mean**	**Median**	**SD**	**SE**	**Wilcoxon Z**	**P-Value**	**% Effect**	**Result**
BT	1.33	1.00	0.76	0.14	-4.146[b]	0.0000338	47.50	Sig
AT	0.70	1.00	0.53	0.10				

Swedadhikya	**Mean**	**Median**	**SD**	**SE**	**Wilcoxon Z**	**P-Value**	**% Effect**	**Result**
BT	1.23	1.00	0.68	0.12	-2.828b	0.0046777	21.62	Sig
AT	0.97	1.00	0.56	0.10				

Dourgandya	**Mean**	**Median**	**SD**	**SE**	**Wilcoxon Z**	**P-Value**	**% Effect**	**Result**
BT	0.47	0.00	0.63	0.11	-3.207[b]	0.0013406	85.71	Sig
AT	0.07	0.00	0.25	0.05				

Chala Sphika Udara Stana	**Mean**	**Median**	**SD**	**SE**	**Wilcoxon Z**	**P-Value**	**% Effect**	**Result**
BT	1.30	1.00	0.88	0.16	-2.828[b]	0.0046777	20.51	Sig
AT	1.03	1.00	0.85	0.16				

Dourbalya	**Mean**	**Median**	**SD**	**SE**	**Wilcoxon Z**	**P-Value**	**% Effect**	**Result**
BT	0.97	1.00	0.81	0.15	-4.583[b]	0.0000046	72.41	Sig
AT	0.27	0.00	0.58	0.11				

Snigdhangata	**Mean**	**Median**	**SD**	**SE**	**Wilcoxon Z**	**P-Value**	**% Effect**	**Result**
BT	0.63	1.00	0.61	0.11	-3.000[b]	0.0026998	47.37	Sig
AT	0.33	0.00	0.55	0.10				

Sandi Shoola	Mean	Median	SD	SE	Wilcoxon Z	P-Value	% Effect	Result
BT	1.53	2.00	0.63	0.11	-5.135[b]	0.0000003	65.22	Sig
AT	0.53	1.00	0.51	0.09				

Alasya/ Utsahahani	Mean	Median	SD	SE	Wilcoxon Z	P-Value	% Effect	Result
BT	0.40	0.00	0.56	0.10	-3.000[b]	0.0026998	75.00	Sig
AT	0.10	0.00	0.31	0.06				

Gatra Sada	Mean	Median	SD	SE	Wilcoxon Z	P-Value	% Effect	Result
BT	0.97	1.00	0.81	0.15	-3.317[b]	0.0009111	37.93	Sig
AT	0.60	1.00	0.56	0.10				

Angagaurva	Mean	Median	SD	SE	Wilcoxon Z	P-Value	% Effect	Result
BT	1.43	2.00	0.82	0.15	-4.523[b]	0.0000061	55.81	Sig
AT	0.63	1.00	0.56	0.10				

Table 7: Effect of Drug on BMI (kg/m²)

BMI (kg/m²)	Mean	N	SD	SE	t-Value	P-Value	% Change	Result
BT	29.07	30	5.15	0.94	10.652	0.000	3.94	Sig
AT	27.93	30	4.94	0.90				

Table 8: Effect of Drug on Waist Circumference (cm)

Waist Circumference (cm)	Mean	N	SD	SE	t-Value	P-Value	% Change	Result
BT	102.10	30	11.84	2.16	8.698	0.000	1.96	Sig
AT	100.10	30	11.47	2.09				

Table 9: Effect of Drug on Hip Circumference (cm)

Hip. Circumference (cm)	Mean	N	SD	SE	t-Value	P-Value	% Change	Result
BT	110.40	30	12.52	2.29	9.191	0.000	2.02	Sig
AT	108.17	30	12.34	2.25				

Table 10: Effect of Drug on WHR

WHR	Mean	N	SD	SE	t-Value	P-Value	% Change	Result
BT	0.93	30	0.08	0.01	-0.346	0.731	0.10	NS
AT	0.93	30	0.08	0.01				

Table 11: Effect of Drug on Lipid Profile

Total Cholesterol (mg/dl)	Mean	N	SD	SE	t-Value	P-Value	% Change	Result
BT	196.07	30	48.71	8.89	4.828	0.000	13.86	Sig
AT	168.91	30	22.94	4.19				

Serum LDL (mg/dl)	Mean	N	SD	SE	t-Value	P-Value	% Change	Result
BT	114.13	30	46.28	8.45	3.942	0.000	17.98	Sig
AT	93.61	30	23.44	4.28				

Serum VLDL (mg/dl)	Mean	N	SD	SE	t-Value	P-Value	% Change	Result
BT	44.61	30	13.95	2.55	6.317	0.000	26.04	Sig
AT	32.99	30	7.35	1.34				

Serum HDL (mg/dl)	Mean	N	SD	SE	t-Value	P-Value	% Change	Result
BT	41.83	30	8.12	1.48	-0.721	0.477	0.99	NS
AT	42.25	30	6.49	1.18				

Serum. Triglycerides (mg/dl)	Mean	N	SD	SE	t-Value	P-Value	% Change	Result
BT	224.31	30	69.02	12.60	6.594	0.000	26.23	Sig
AT	165.47	30	36.63	6.69				

Table 12: Incidence of Signs and Symptoms

Parameter	No. of Patients	Percentage
Kshudra Shwasa	22	73.33%
Ati pipasa	28	93.33%
Ati nindra	16	53.33%
Kshudha	26	86.67%
Swedadhikya	27	90.00%
Dourgandya	12	40.00%
Chala Sphika Udara Stana	24	80.00%
Dourbalya	22	73.33%
Snigdhangata	17	56.67%
Sandi Shoola	28	93.33%
Alasya/ Utsahahani	11	36.67%
Gatra Sada	21	70.00%
Anga Gaurva	25	83.33%

Table- 13: % Effect of Therapy

Parameter	% Effect
Kshudra Shwasa	58.97
Ati pipasa	58.82
Ati nindra	65.22
Kshudha	47.50
Swedadhiya	21.62
Dourgandya	85.71

Chala Sphika Udara Stana	20.51
Dourbalya	72.41
Snigdhangata	47.37
Sandi Shoola	65.22
Alasya/ Utsahahani	75.00
Gatra Sada	37.93
Anga Gaurva	55.81
Average % Effect	54.78

Table 14: Overall Effect of Therapy

Overall Effect	Frequency	Percentage
Marked Improvement	0	0.00%
Moderate Improvement	19	63.33%
Mild Improvement	11	36.67%
No Improvement	0	0.00%
Total	30	100.00%

Table 15: Probable Mode of Action of the Drug

Tikta rasa	*Agnideepaka, Pachana, Lekhana, Kled* or *Meda sosaka (Cha. Su 26/43)*
Katu rasa	*Agnideepaka, Sareer Sneha nasak, Kaphanasak, Sroto Sodhana. (Cha. Su. 26/43)*
Kashaya rasa	*Shleshma Prasamana, Kledasosaka. (Cha. Su.26/43)*
Laghu guna	*Lekhana (Su. Su. 46/526)*
Ruksha guna	*Kapha sosaka, Kledanashaka, Medasosaka*

All the above property of *Musta* helps to reduce *Medovaha Srotovikar*. It rectifies the *Agnimandhya* and reduces *Ama Medo Dha*tu which obstructs the *Srotas* (channels). *Kled Sosaka* and *Meda* and *Kapha Sosaka* property also reduce unwanted *Ama Kapha* and *Medo Dhatu* by drying it. *Lekhana* property of this drug scrapping off the unwanted *Dhatu* obstructs the channels. Hence, we can say that *Musta* is one of the drug which reduce *Medovaha Srotovikar*.

CONCLUSION

After the careful observation of the results obtained from the study entitled "An aetiopathological study of *Medovaha Srotodushti* with special reference to hyperlipidemia and its *Upashayatmaka* study of *Musta Kwath*" following conclusion can be drawn:

- The trial drug provided significant effect in *Kshudra Shwasa* (58.97%), *Pipasa* (58.82%), *Nidradhikya (*68.75%), *Kshudha (*47.50%), *Daurgandhya (*85.71%), *Chala Sphika Udara Stana (*20.51%), *Snigdhangata (*47.37%), *Swedadhikya (*21.62%), *Dourbalya (*72.41%), *Sandi Shoola (*65.22%), *Alasya (*75.00%), *Gatra Sada (*37.93%) and *Anga Gaurva (*55.81%).
- Effect of trial drug provided statistically significant changes in BMI, waist and hip circumference.
- Effect of drug on objective parameters provided statistically significant relief in total cholesterol, serum triglyceride, serum LDL, serum VLDL. There is no significant change observed in serum HDL.
- In this study out of 30 patients treated 19 patients (63.33%) showed moderate improvement and 11 patients (36.67%) showed mild improvement. None of the patients showed marked improvement or no improvement.
- There is no direct reference of hyperlipidemia in Ayurvedic classics but it can be referred as *Medovaha Srotodushti*. In which *Asthayi Medo Dhatu* is formed due to deformity of *Medovaha Srotas.*
- *Guru, Snigadha, Shleshmala, Atipicchil,* and *Abhishyandi* attributes of food raise the *Kapha Dhatu* and *Medo Dhatu,* according to the Ayurvedic perspective*.* Overindulgence in these foods raises *Abaddha Medo Dhatu* levels in our bodies, which eventually interfere with *Medovaha Srotas* and cause hyperlipidemia*.*
- *Katu, Tikta, Kashaya rasa, Lagu, Ruksha guna*, and *Katu vipak* are present in *Musta.* These characteristics of *Musta* help in the better metabolism of fats and their metabolic processes*.*

- *Musta* has a major impact on *Medodushti Lakshanas* and in lowering measurable parameters like body circumference, weight, and BMI.
- *Nidanaparivarjana* is one of the basic management for *Medovaha Srotodushti.* If we control our caloric intake, in such patient's cholesterol, triglyceride, blood glucose and blood pressure level fall.
- Exercise is one of the important factors to reduce Triglycerides level.
- Modifications to diet and lifestyle are beneficial for treatment of hyperlipidemia and *Medovaha srotodushti.*

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